CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN FRANCISCO BAY REGION

ORDER NO. 87-129
NPDES NO. CA0029246

WASTE DISCHARGE REQUIREMENTS FOR:

SANTA CLARA COUNTY TRANSPORTATION AGENCY
OREGON EXPRESSWAY UNDERPASS DEWATERING SYSTEM
PALO ALTO
SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board), finds that:

1. The Santa Clara County Transportation Agency, (hereinafter called the discharger), by application dated March 13, 1987 has applied for issuance of waste discharge requirements and a permit to discharge waste under the National Pollutant Discharge Elimination System (NPDES).

2. The discharge results from an underpass dewatering system at Park Boulevard in the city of Palo Alto. The dewatering system consists of buried collection drains linked by a storm drain to the pumping station at the Oregon Expressway underpass at Alma Street. The dewatering system dewaters the shallow groundwater table in the vicinity of the Expressway Underpass and also drains surface stormwater from the roadway. The groundwater would inundate the underpass roadway without this dewatering system. The pumping station contains two 15-horsepower float-controlled pumps which are estimated to have a maximum capacity of 1,200 gpm (gallons per minute) each. The low flow rate (groundwater only) has been estimated at 350 gpm. The pump station discharges to a six foot square concrete box culvert which discharges into Matadero Canal. Matadero canal is a concrete lined channel for 6600 feet and flows northerly approximately 2.5 miles to eventually discharge into San Francisco Bay.

3. During the course of groundwater investigations at the Hewlett-Packard 640 Page Mill Road site (Waste Discharge Requirements Order No. 86-27), which lies approximately 2000' upgradient and to the southwest, it was discovered that the Oregon Expressway dewatering system intercepts polluted groundwater emanating from the Hewlett-Packard site and other sources in the area.

4. The dewatering system is a significant localized hydrological feature which acts to contain further migration of pollutants in the shallow groundwater in this area.

5. The pump station discharge consists primarily of groundwater during the dry season with an estimated average flow rate of 350 gpm and a total VOC concentration of approximately 300 ppb. In addition to groundwater the wet weather discharge consists of surface runoff from the highway underpass. During a February 1987 storm event the flowrate was measured at 3,150 gpm with non-detectable concentrations of volatile organic compounds.

6. Water samples taken at the pump station intake have shown significant concentrations of chemicals which have been released to the groundwater at sites upgradient of the underpass dewatering system. These chemicals and their maximum concentrations include: trichloroethene (TCE) at 180 ppb (parts per billion), perchloroethene (PCE) at 82 ppb, trans-1,2-dichloroethene at 16 ppb, and 1,1,1-trichloroethane (TCA) at 13 ppb.

7. Samples taken at the discharge point into Matadero Canal and at several other sampling stations located downstream of the discharge point indicate that chemical concentrations decrease with distance from the discharge. For example concentrations of TCE at 89 ppb near dewatering system discharge point decrease to 9 ppb approximately one mile downstream.

8. The discharger has proposed air stripping technology to treat the pump station discharge. This technology is considered effective in reducing concentrations of VOC's in the water to 5 parts per billion per constituent.

9. The treatment system is designed to treat groundwater flows only. This is facilitated by a jockey sump pump which would not pump storm water runoff to the treatment system. Oil and grease from surface runoff would be detrimental to the treatment system.

10. This permit allows for the discharge of treated groundwater and some surface water from the Oregon Expressway dewatering system to the Matadero Canal.

11. The Regional Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on December 17, 1986. The Basin Plan contains water quality objectives for Matadero Canal and South San Francisco Bay and contains discharge prohibitions applicable to shallow water discharges in these areas.

12. The existing and potential beneficial uses for Matadero Canal and South San Francisco Bay are:

    Water Contact Recreation
    Non-contact Recreation
    Wildlife Habitat
    Fish Spawning

13. The existing and potential beneficial uses of South San Francisco Bay include:

Navigation
Commercial and Sport Fishing
Preservation of Rare and Endangered Species
Fish Migration

Shellfish Harvesting
Estuarine Habitat

14. The Basin Plan prohibits discharge of wastewater which has "particular characteristics of concern to beneficial uses" (a) "at any point in San Francisco Bay south of the Dumbarton Bridge" and (b) "at any point where the wastewater does not receive a minimum initial dilution of at least 10:1 or into any nontidal water, deadend slough, similar confined water, or any immediate tributary thereof."

15. The Basin Plan allows for exceptions to the prohibitions referred to in Finding 14 above when it can be demonstrated that a net environmental benefit can be derived as a result of the discharge.

16. Exceptions to the prohibitions referred to in Finding 14 are warranted because the discharge is an integral part of a program to cleanup contaminated groundwater and thereby produce an environmental benefit, and because receiving water concentrations are expected to be below levels that would affect beneficial uses.

17. The Basin Plan prohibits discharge of "all conservative toxic and deleterious substances, above those levels which can be achieved by a program acceptable to the Board, to waters of the Basin." The discharger's dewatering and treatment system and associated operation, maintenance, and monitoring plan constitutes an acceptable control program for minimizing the discharge of toxicants to waters of the State.

18. Effluent limitations of this Order are based on the Basin Plan, State Plans and Policies, this Board's "Discharge of Polluted Groundwater to Surface Waters: Guidance Document, September 1985," and best engineering judgment.

19. The issuance of waste discharge requirements for the discharge is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.

20. The Board has notified the discharger and interested agencies and persons of its intent to issue waste discharge requirements for the discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

21. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the discharger, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and Guidelines adopted thereunder, shall comply with the following:

A. Effluent Limitations

1. The effluent at the point of discharge to the storm drain shall not contain constituents in excess of the following limits:

Constituent	Unit	Instantaneous Maximum
1,1,1-trichloroethane	ug/l	5
trichloroethylene	ug/l	5
1,1-dichloroethane	ug/l	5
1,2-dichloroethane	ug/l	5
1,1-dichloroethylene	ug/l	5
trans-1,2-dichloroethylene	ug/l	5
tetrachloroethylene	ug/l	5
1,1,2,2-tetrachloroethane	ug/l	5
vinyl chloride	ug/l	5
dichlorotrifluroethane	ug/l	5
Freon 113	ug/l	5
1,2-dichlorobenzene	ug/l	5
xylenes	ug/l	5
toluene	ug/l	5
ethyl benzene	ug/l	5
acetone	ug/l	50

2. The pH of the discharge shall not exceed 8.5 nor be less than 6.5.

3. In any representative set of samples, the discharge of waste shall meet the following limit of quality:

TOXICITY:

The survival of test fishes acceptable to the Executive Officer in 96-hour bioassays of the effluent as discharged shall be a median of 90% survival and a 90 percentile value of not less than 70% survival.

B. Receiving Water Limitations

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:

a. Floating, suspended, or deposited macroscopic particulate matter or foam;

b. Bottom deposits or aquatic growths;

c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;

d. Visible, floating, suspended, or deposited oil or other products of petroleum origin:

e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or water fowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

a.	pH:	The pH shall not be depressed below 6.5 nor raised above 8.5, nor caused to vary from normal ambient pH levels by more than 0.5 units.
b.	Un-ionized Ammonia:	The concentration of un-ionized ammonia shall not exceed a maximum at any time of 0.4 mg/l as N and an annual median of 0.025 mg/l as N.

3. This discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Federal Water Pollution Control Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

Provisions

1. With the exceptions noted below all provisions of this Order shall be effective immediately.

2. Compliance with the effluent (A) and receiving water (B) limitations shall be achieved according to the following time schedule.

	TASKS	COMPLETION DATE
a.	Submit monthly status reports on construction of effluent treatment system.	Starting October 15 and not later than the 15th of each month thereafter until complete.
b.	Submit a Technical Report documenting completion of construction.	July 5, 1988
c.	Submit a Technical Report documenting full compliance with all effluent and receiving water limitations.	August 5, 1988
d.	Submit an Operations and Maintenance Plan acceptable to the Executive Officer.	September 5, 1988

If non-compliance or threatened non-compliance is reported, the reasons for noncompliance and an estimated date shall be provided.

3. The discharger shall comply with the self-monitoring program as adopted by the Board and as may be amended by the Executive Officer.

4. The discharger shall notify the Regional Board if any activity has occurred or will occur which would result in the discharge, on a frequent or routine basis, of any toxic pollutant which is not limited by this Order.

5. The discharger shall comply with all items of the attached "Standard Provisions and Reporting Requirements" dated December 1986, except items B.2, B.3, C.8, and C.11.

6. This Order expires August 19, 1992 and the discharger must file a report of Waste Discharge in accordance with Title 23, California Administrative Code, not later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.

7. This Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Clean Water Act, or amendments thereto, and shall become effective at the end of ten days from date of hearing provided the Regional Administrator, U.S. Environmental Protection Agency, has no objection.

I, Roger B. James, Executive Officer do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on September 16, 1987.

ROGER B. JAMES
Executive Officer

Attachments:

Standard Provisions & Reporting Requirements, December 1986.
Self-Monitoring Program
Site Map

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

OREGON EXPRESSWAY UNDERPASS DEWATERING SYSTEM

PALO ALTO, SANTA CLARA COUNTY

Operated by

SANTA CLARA COUNTY TRANSPORTATION AGENCY

MILPITAS, SANTA CLARA COUNTY

NPDES NO. CA0029246

ORDER NO. 87-129

CONSISTS OF
PART A, Dec. 1986
modified Jan. 1987
and
PART B, adopted September16, 1987

PART B

OREGON EXPRESSWAY UNDERPASS DEWATERING SYSTEM

SANTA CLARA COUNTY TRANSPORTATION AGENCY
MILPITAS, SANTA CLARA COUNTY

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT

Stations	Description
I-1	At a point in the groundwater extraction/ treatment system immediately prior to any treatment.

B. EFFLUENT

E-1	At a point in the groundwater extraction/ treatment system immediately following treatment at a point before discharging into the storm drain.

C. RECEIVING WATERS

C-1	At a point in the Matadero Canal at least 10 feet but no more than 20 feet down-stream from the storm drain discharge point.
C-2	At a point approximately 1800 feet down stream where Matadero Canal passes beneath Waverly Street.

II. MISCELLANEOUS REPORTING

At least 30 days before any chemicals are utilized in or added to the treatment system, they shall be reported to the Executive Officer for review and approval.

III. SCHEDULE OF SAMPLING AND ANALYSIS

A. The schedule of sampling and analysis is provided in Table 1 (attached).

IV. MODIFICATION OF PART A

A. Delete Sections D.2.e, D.2.g, E.3, and E.4.

B. Section G.4.b shall be changed to read as follows:

Compliance Evaluation Summary

Each report shall be accompanied by a compliance evaluation summary sheet prepared by the discharger. The report format will be prepared similar to the example shown in APPENDEX A (attached). The discharger will prepare the format substituting for the example parameters those parameters and requirement limits for influent, effluent, and receiving water constituents specified in the permit.

C. The first paragraph of Section G.4.d shall be changed to read as follows:

Results of Analyses and Observations

Each report shall include tabulations of the results from each required analysis specified in Part B by date, time, type of sample, detection limit, and station. Laboratory analytical reports shall be signed by the laboratory director. The report format will be prepared similar to the examples shown in APPENDIX B, substituting those parameters specified in the permit for the parameters given in the example.

D. Information requested under Section G.4.e shall be prepared in a format similar to EPA Form 3320-1 and shall be submitted only to the Regional Board.

E. Section G.5 shall be modified to read as follows:

Annual Reporting

By January 30 of each year, the discharger shall submit in place of the end of the year monthly report, an annual report to the Regional Board covering the previous calendar year. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year. In addition, the report shall contain a comprehensive discussion of the compliance record and the corrective actions taken or planned which may be needed to bring the discharger into full compliance with the waste discharge requirements. The report format will be prepared by the discharger similar to the examples shown in APPENDIX D (attached) subsitituting those parameters specified in the permit for the parameters given in the example and should be maintained and submitted with each regular self-monitoring report.

I, Roger B. James, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in

this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No.

2. Was adopted by the Board on September 16, 1987.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or upon request from the discharger, and revisions will be ordered by the Executive Officer.

ROGER B. JAMES
Executive Officer

Attachments: Table 1

TABLE 1
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

SAMPLING STATION >>>>	I-1	E-1	C-1	
TYPE OF SAMPLE	G	G	G	
Flow Rate (gal/day)		D		
pH (units)	M	M	Q	
Temperature (deg. C)		M		
EPA 601/602 for: purgeable priority pollutants in addition to: Freon 113 xylene isomers	M	M	Q	
GC/MS Scan (EPA 624)		2/Y*		
Toxicity		1/Y		
Unionized Ammonia (as N)		M	Q	

LEGEND FOR TABLE 1

G = grab sample
D = once each day
M = once each month
Q = quarterly, once in March, June, September and December
M/Q = monthly for three months at startup of operation; reduced to quarterly thereafter
2/Y = Once in March and once in September
1/Y = once per year

* EPA 601/602 not required for months when EPA 624 is performed.